

Having just described the invention, we claim:

1. A method for inspecting attributes of containers useful in a system having at least one sensing means and a source of near IR electromagnetic radiation, the method comprising steps of:

5 selectively adding optical absorbing compounds acting in the near IR wavelength range to a plurality of polymer layers;

forming a container having the plurality of polymer layers, each polymer layer being formulated to perform a different set of container-related functions;

10 disposing the container between the sensing means and the source of near IR electromagnetic radiation;

activating the source to generate near IR electromagnetic radiation;

sensing the near IR electromagnetic radiation by the sensing means; and, determining the attributes of the container based on the sensing.

2. The method of claim 1 further comprising determining a state, quality, or acceptability of the container based on sensing and determining.

3. The method of claim 2 further comprising one of rejecting and marking for subsequent action the container based on the state, quality or acceptability of the container.

4. A machine vision apparatus comprising:

5 a sensor device comprising an array of photosensitive elements operative to be sensitive to radiation within the near IR portion of the electromagnetic spectrum;

a source of electromagnetic radiation wherein a portion of an emitted spectrum thereof is within the near IR portion of the electromagnetic spectrum;

part detection, tracking, and conveyance means operative to interact with multi-layer containers under test and maneuver the containers into an advantageous position between the sensor device and source and to provide instrument control signals to both the sensor device and source;

10 a processing means which receives output of the sensor device and executes processing operations to analyze attributes based on a presence of selectively absorptive dyes acting in the near IR portion of the electromagnetic spectrum; and,

15 a means which receives the processed output of the processing means and acts to facilitate one of rejecting and marking for subsequent action the container based on the attributes analyzed.

5. The apparatus of claim 4 wherein the source comprises an array of LED emitters.

6. The apparatus of claim 5 wherein the LED emitters are pulsed.